

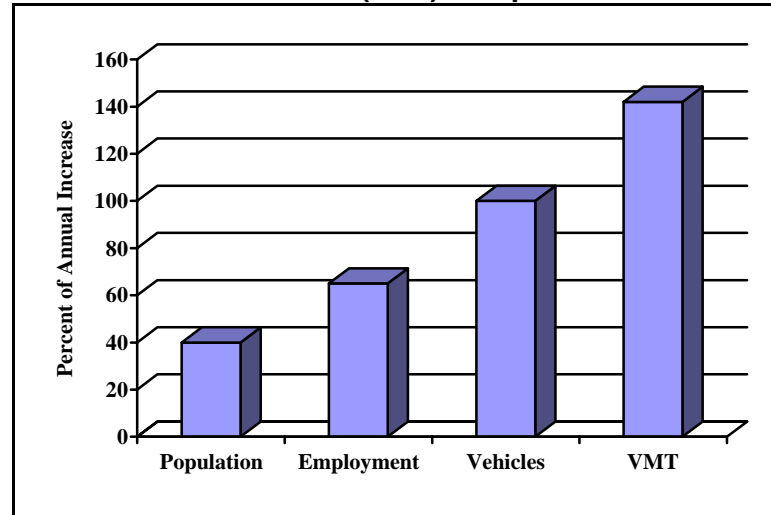
7 TRANSPORTATION

One of the most vital elements of any community is its transportation system. The streets, highways, public transit, and railroads, of a community, are all essential part for the orderly functioning of the transportation system. The transportation system provides for the mobility of people and goods as well as access to land. Planning for these facilities involves a comprehensive analysis of the ability of the transportation systems to accommodate future changes in demand with minimal cost and negative impacts on the community.

Since the development of the automobile at the turn of the century no other modern convenience has had a greater impact on the makeup of the modern community. As a society we have become more and more dependent on automobile transportation. The relationship of transportation and land use development is very complex and reciprocal. Land use patterns affect travel decisions and travel decisions affect land use patterns. As vehicular miles traveled continue to increase, as shown in the figure, the need for sound planning of the transportation will become more and more important.

Brigham City's transportation system is part of a much larger regional system. This system of local roads, highways, and interstate freeways will play an important part in the evolving transportation picture of Box Elder County. The understanding of these different transportation systems and their impact on land use is critical for development of a long term General Plan.

Vehicular Miles Traveled (VMT) Comparison 1970 - 1999



Source: U.S. Statistical Abstract and Federal Highway Administration

7.1 RELEVANT CORE PRINCIPLES

| Core Principle: | COMMUNITY & ECONOMIC DEVELOPMENT |
|-----------------|--|
| 1. | OVER-ARCHING: Growth in Brigham City is essential and desirable to maintain our economic vitality and provide homes and employment for our children. A well-crafted, publicly-supported General Plan should seek to improve the quality of life for current and future residents, while recognizing the challenges associated with growth and change. |
| 1b. | Promote well-designed and attractive neighborhoods that are safe and desirable to live in. |
| 1c. | Promote well-designed and attractive office, commercial and industrial areas to foster the type of growth desired by the community. |
| 2 | ECONOMIC: Brigham City desires to grow a healthy and diverse economy to provide quality, higher-paying jobs that provide career advancement opportunities to residents, and allow residents and young adults to stay in the community. |
| 2d5. | Reduce traffic congestion by a well designed traffic plan including artery streets in each of Brigham City 4 main quadrants and connecting these artery streets to highways exiting the city and reducing the pressure on Main Street. |
| 5 | TRANSPORTATION: Develop a balanced transportation system for all residents, by promoting walking and biking trails/paths, supporting public transportation opportunities, and by improving the functionality of safe automobile routes and infrastructure. |

Land Use

In order to understand the City's transportation system, it is essential to understand the land use patterns within the community. Part II of the General Plan discusses the different land use classifications and City's Annexation Policy Plans. Much of the City is, currently, zoned residential uses, but there are also many issues dealing with commercial and industrial properties. The three mineral extractive sites operating on the east side of Brigham City also create special transportation issues as present routes unavoidably take these vehicles through the downtown, creating conflicts with pedestrians and other traffic. By analyzing the patterns or changes in land use, we can better predict the ever-changing transportation needs.

Existing Transportation System

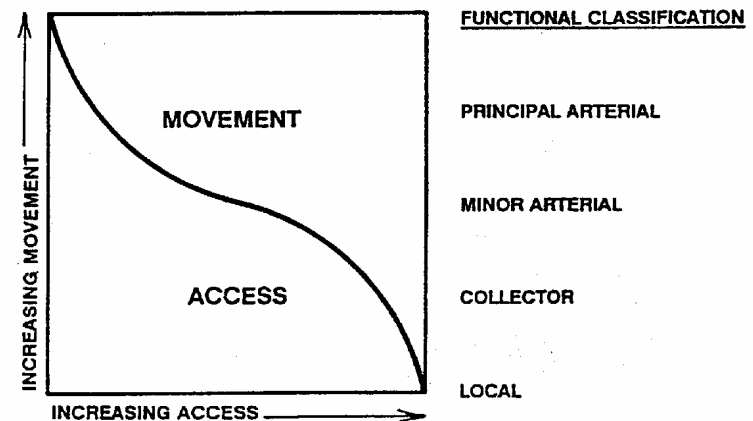
The existing transportation system within Brigham City is made up of many different roadways. Each of these roadways have different functions and purposes. The first step in understanding a community's transportation system is the understanding the function, purpose and ownership.

The Plan identifies the current function and operational characteristics of the selected roadway network of Brigham City. Functional street classification is a subjective means to identify how a roadway functions and operates when a combination of the roadway's characteristics are evaluated. These characteristics include; roadway configuration, right-of-way, traffic volume, carrying capacity, property access, speed limit, roadway spacing, and length of trips using the roadway.

The primary classifications used in classifying selected roadways of Brigham City are: Interstate, Principle Arterial, Minor Arterial, Major Collector, Minor Collector and Local. An Arterial's function is to provide traffic mobility at higher speeds with limited property access. Traffic from the local roads is gathered by the Collector



Downtown Brigham City, Main Street and Forest Street



system, which provides a balance between mobility and property access trips. Local streets and roads serve property access based trips and these trips are generally shorter in length. The following list is a breakdown of the general classification and characteristics of individual roadway type.

Freeway - Interstate 15/84 is the only example of this type of this street classification in Brigham City. These types of roads characteristically are designed for higher speeds, contain a minimum of 4 lanes, no access to adjacent properties and link major regional and national destination points.

Arterial – The primary function of these types of roads is to move traffic to destination with a larger regional setting and to provide direct access to freeways. Generally, the wide of these roadways range over 100 feet to 80 foot rights-of-way. During the peak hours of travel these roadways may relieve some to the traffic demand on the freeway system.

Collector - These streets serve mainly internal neighborhood traffic movements or connect an area with the arterial street system. The intent is to handle through traffic for short distances. Collector streets provide the link to minor streets and are generally characterized by two lanes of traffic with an ample median/turning lane or by four lanes with no parking allowed on streets during peak hours. These types of roadways will have right-of-way width ranging from 80 feet to 66 foot.

Minor Collector - The primary purpose of these streets is to provide good accessibility to land. Traffic volumes should be very low and traffic movements slow. On-street parking combined with short lengths and reduced pavement width yields essentially a one lane street with a 60 foot right-of-way.

Local Street - The primary purpose of a local street is to provide good accessibility to land. Traffic volumes should be very low and traffic movements slow. On-street parking combined with short lengths and reduced pavement width yields essentially a one lane street with a 60 foot right-of-way.



SR-91 & Medical Way Intersection

General Characteristics Of Streets

| TYPE | CAPACITY | SPEED | R-O-W |
|---------------------------|------------------|--------------|-------------|
| Freeway | 2000 vphpl* | 55 mph | > 150 ft |
| Principal Arterial | 650 - 1200 vphpl | > 45 mph | > 100 ft |
| Minor Arterial | 550 - 700 vphpl | >35 - 45 mph | 80 - 110 ft |
| Collector | 450 - 650 vphpl | >30 - 40 mph | 66 - 84 ft |
| Minor Collector | 400 - 600 vphpl | 25 - 35 mph | 60 - 70 ft |
| Local | < 400 vphpl | < 30 mph | < 66 ft |

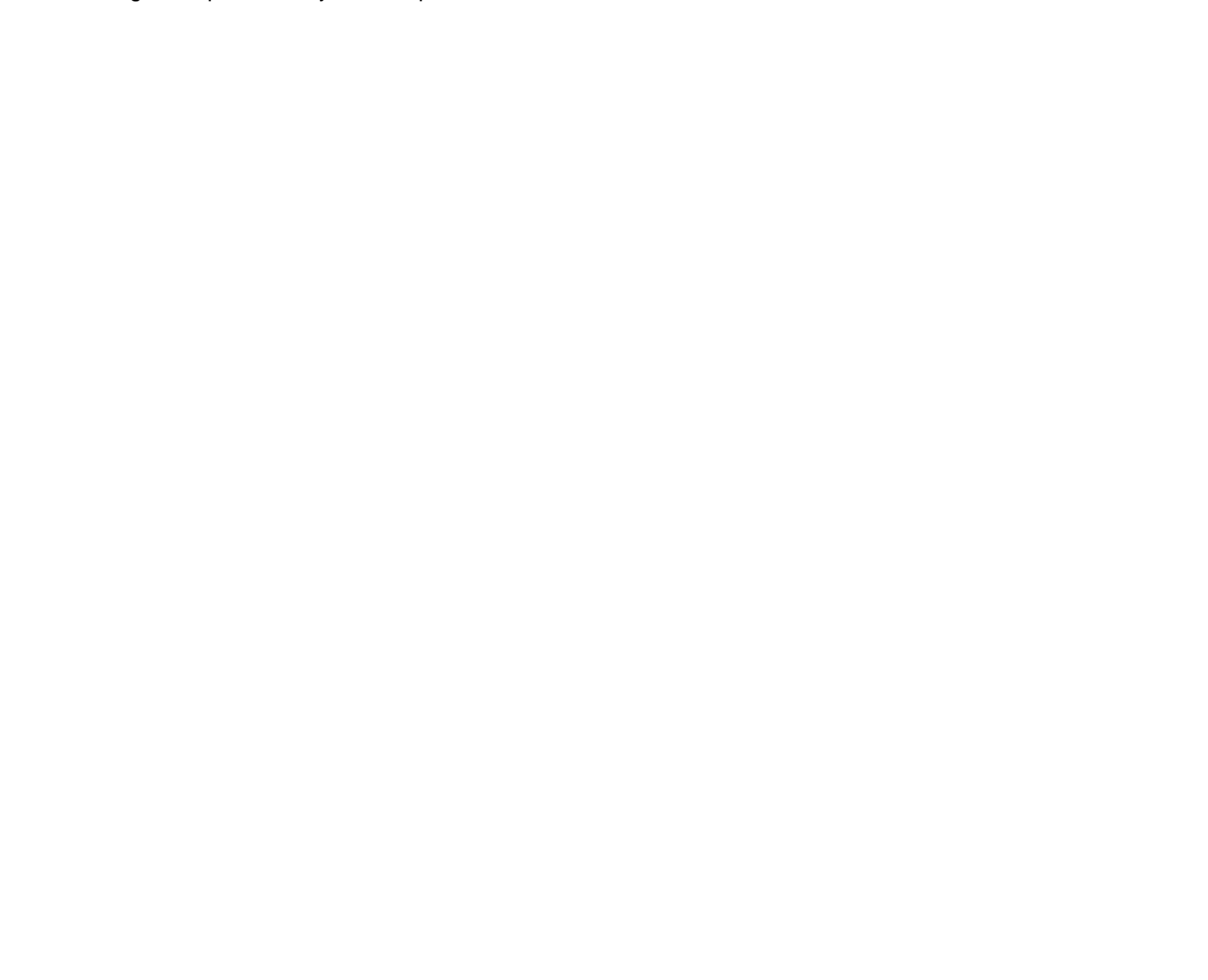
vphpl - vehicles per hour per travel lane

Source: Wasatch Front Regional Council

The Brigham City area is accessed by US-91 to I-15 as well as by SR-13. US-89 bisects the City North to South. SR-38 travels north out of the city, US-91 travels east toward the Logan Valley. SR-90 seems to be a connector route within the city limits. SR-13 travels west out of the City toward the Corinne community. The functionally classified system is currently being revised statewide. The current functionally classified system generally defines the higher traffic roads, so only minor additions or changes will be required.

Brigham City's transportation system is a street network made up many different roadways. The map on the following page displays the important thoroughfares within Brigham City, along with their corresponding right-of-ways and Functional Classification. The City's street system is composed of four major types of roads. Each of the different street categories can handle different amounts of traffic within safe speed limits

Front Existing Transportation System Map



Bridges

There are twelve bridges on the state system located in the study area that could be eligible for federal bridge maintenance, rehabilitation, or replacement funds. Bridges are maintained and minor repairs made with maintenance funds. A bridge is rehabilitated or replaced as it deteriorates over time and as traffic volumes increase. (Figure 10 Bridge Sufficiency Rating)

Table 1 compares the bridges in the study area and identifies their sufficiency rating and location. Sufficiency rating indicates current condition of the structure with a rating of 100 showing a structure that is in excellent shape. A rating nearing 50 will reveal a structure that is in need of attention and is eligible for federal funding.



SR-89/91 & 200 South Interchange

Bridges

| Number | Location | Maximum Span | No. Lanes & Road Width | Sidewalk | Sufficiency Rating |
|--------------|---------------------------------|--------------|------------------------|----------|--------------------|
| 0F 599 | SR-13 | 42.5M | 2 lane/ 19.4 M | Yes | 95.3 |
| 0D 383 | CHASE SLOUGH (SR-13) | 6.7 M | 2 lane/ 11.6 M | No | 82.4 |
| 1C 334(NBL) | SR-13 & UNION PACIFIC RR | 71.9 M | 2 lane/ 10.7M | No | 77.3 |
| 3C 334 (SBL) | SR-13 & UNION PACIFIC RR | 71.9 M | 2 lane/ 14.3 | No | 77.3 |
| 0C 431 | I-15 (SR-15) NBL & SBL | 73.5 M | 2 lane/ 11.0 M | Yes | 51.0 |
| 0E1349 | BLACK SLOUGH (I-15) | 7.0 M | 4 lane/ 22.2 M | No | 70.2 |
| 0F 584 | I-15 (SR-15) NBL & SBL | 75.3 M | 2 lane/ 18.7 M | No | 99.8 |
| 1F 168 | US-91 (SR-91) NBL & SBL | 91.1 M | 2 lane/ 8.5 M | No | 49.8 |
| 1C 451(NBL) | UNION PACIFIC RAILROAD (US-91) | 63.6 M | 2 lane/ 10.7M | Yes | 85.3 |
| 3C 451 (SBL) | UNION PACIFIC RAILROAD (US-91) | 53.6M | 2 lane/ 10.7M | Yes | 86.3 |
| 0F 166 | BOX ELDER CREEK (US-91) | 9.6 M | 5 lane/ 29.6 M | No | 84.9 |
| 0F 578 | TOWN ROAD,INTCHG.X-ROAD (US-91) | 45.7 M | 4 lane/ 24.8 M | No | 83.9 |

Source: Utah Department of Transportation/Structures Division

Traffic Volumes

Evaluating the traffic volumes on a roadway can give you insight into what is happening on that roadway. Average annual daily traffic (ADT) count data shown were collected UDOT. The number of vehicles in both directions that pass over a given segment of roadway in a 24-hour period is referred to as the average annual daily traffic (AADT) for that segment. The table shows the traffic count data on the key State Routes within Brigham City.

These are averages for the entire year. Brigham City experiences a significant increase in traffic during the summer months. UDOT maintains 86 continuously operated automatic traffic recorders (ATR) throughout the state highway system. ATRs collect data continuously throughout the year in order to determine monthly, weekly, daily, and hourly traffic patterns. One ATR located in or near the study area on US-91. The following points summarize the 2003 data from the ATR at this location.

Traffic on US-91; 0.8 Miles North of SR-101, Wellsville @ MP 19.55

- August was the highest volume month.
- December was the lowest volume month.
- The highest daily volumes occurred on Friday.
- The lowest daily volumes occurred on Sunday.

The peak months of May and August is consistent with an increase in recreational traffic to Bear Lake, Jackson Hole, Yellowstone and Grand Teton National Parks in Wyoming and other recreational areas. Additional, traffic on US 91 includes those going to Cache County and Utah State University in Logan.

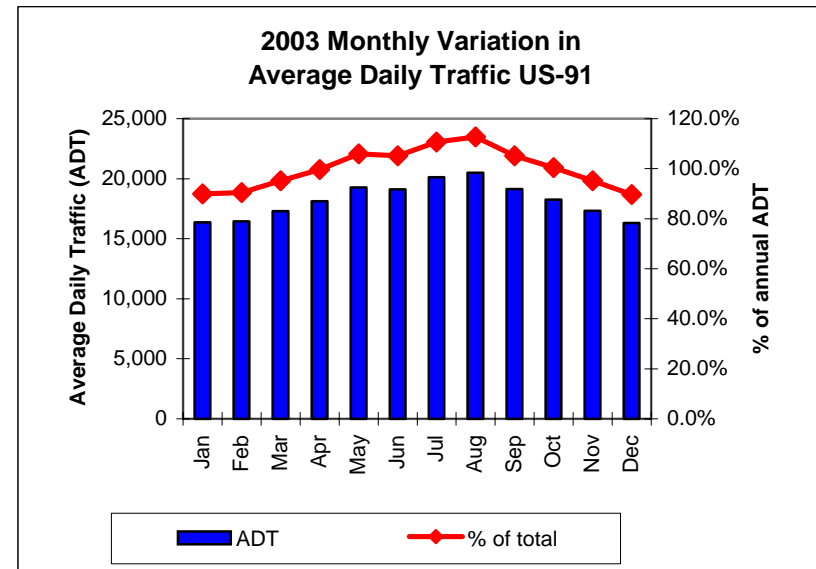
The hourly traffic shows a clear average peak hour of around 3:00 to 5:00 pm. This peak in traffic volumes is consistent with an afternoon commuter traffic that peak.

Average Annual Daily Traffic (AADT), 2003 & 2004

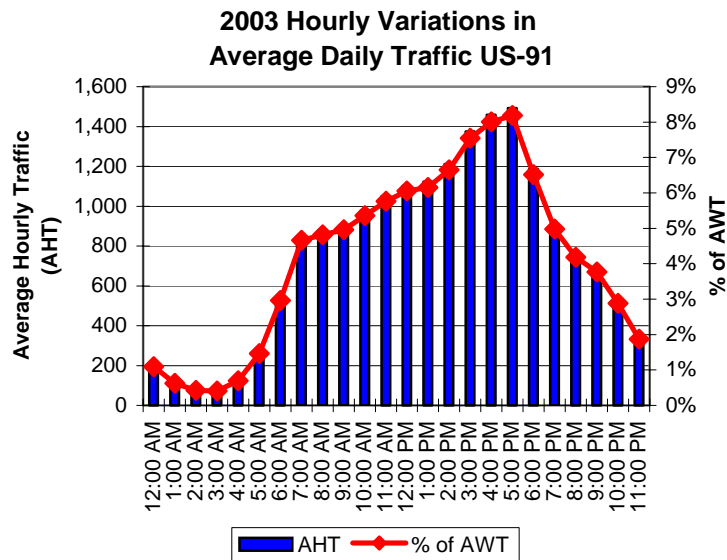
| Road | Segment | 2003 | 2004 |
|-------|---|--------|--------|
| SR-13 | Junction SR-90 In Brigham City | 15,680 | 15,475 |
| SR-13 | Junction SR-38 via Main Str. Brigham City | 7,240 | 7,145 |
| SR-13 | Junction of I-15 North Brigham City | 5,485 | 5,735 |
| I-15 | US-91 to Forest Str Interchange | 30,443 | 24,681 |
| I-15 | Forest Str Interchange to SR-13 | 26,572 | 25,907 |
| I-15 | North of SR-13 | 23,775 | 23,180 |
| SR-38 | SR-13 to Brigham City Boundary | 3,736 | 2,860 |
| SR-38 | North of Brigham City Boundary | 2,735 | 2,755 |
| US-89 | North Incorp Limits/ Sr-91 Brigham City | 14,750 | 14,840 |
| US-90 | Junction Sr-13 Main Street | 8,875 | 9,785 |
| US-90 | Junction 600 East Str-Sr-91 Brigham City | 4,725 | 5,230 |
| SR-91 | I-15 to Main Street/US-89 | 18,100 | 18,985 |
| SR-91 | Main Str/US-89 to SR-90 | 17,655 | 18,520 |

Source: Utah Department of Transportation

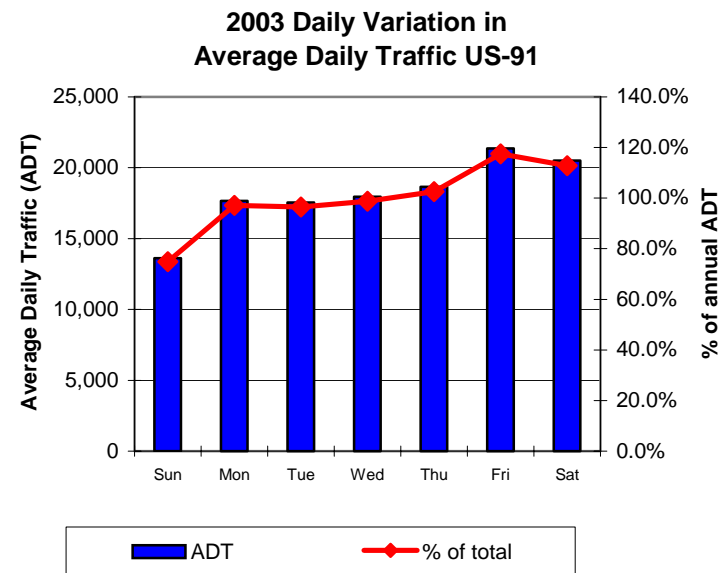
*INCL=Incorporated City Limits



Source: Utah Department of Transportation



Source: Utah Department of Transportation



Source: Utah Department of Transportation

Traffic Accidents

The review of traffic accident data also provide a method and insight into looking at the transportation system and determine problems areas with the transportation system. The table shows traffic accident data obtained from UDOT's database of reported accidents on state routes from 2002. This table summarizes the accident statistics for those segments for the year 2002. Additional information includes the average daily traffic, the number of reported accidents, and the accident rates. These roadway segments accident rates were determined in terms of accidents per million vehicle miles traveled. The crash rates for each roadway segment are compared to the expected crash rate for similar facilities across the state.

Upon review of the accident data for the state system, there appears to be a higher than expected accident rates at the following locations:

- On SR-13 From the Junction of SR-91 to Forest Street
- On SR-13 From Bear River to 3900 West
- On I-15 From Exit 360 Willard/Perry to Exit 364 Brigham
- On SR-38 North of Brigham City (3 Miles)
- On US-89 From 1850 South Perry to the Junction of US 91

The remainder of the state system shows a lower than expected accident rate. The map on the following page 13 shows accident data taken from 1999-2001, which shows various segments of the state highway system and associated accident data.

Brigham City may wish to review the accident history for the local street system to identify any specific accident hot spot locations.

Traffic Accident Crash Data, 2002

| Road | From Milepost | End Milepost | ADT (2002) | # Crashes (2002) | Crash Rate | |
|-------|---------------|--------------|------------|------------------|------------|-----------|
| | | | | | Actual | Expected* |
| SR-13 | 0 | 1.64 | 15,965 | 52 | 4.24 | 2.58 |
| SR-13 | 1.65 | 2.87 | 15,585 | 11 | 1.21 | 2.58 |
| SR-13 | 2.88 | 3.63 | 7,370 | 3 | 2.18 | 3.01 |
| SR-13 | 3.64 | 5.58 | 5,070 | 3 | 0.90 | 4.11 |
| SR-13 | 5.59 | 7.26 | 5,585 | 3 | 0.59 | 1.98 |
| SR-13 | 7.27 | 8 | 6,785 | 4 | 2.34 | 1.98 |
| I-15 | 358 | 362.39 | 44,510 | 25 | 0.38 | 1.15 |
| I-15 | 362.4 | 364.12 | 32,046 | 6 | 0.32 | 1.00 |
| I-15 | 364.13 | 365.91 | 27,971 | 17 | 1.01 | 0.89 |
| I-15 | 365.92 | 370 | 25,174 | 14 | 0.40 | 0.89 |
| SR-38 | 0 | 0.28 | 3,736 | 0 | 0.00 | 4.87 |
| SR-38 | 0.29 | 1.03 | 2,735 | 1 | 0.86 | 4.87 |
| SR-38 | 1.04 | 4 | 2,750 | 12 | 2.57 | 2.28 |
| US-89 | 373 | 374.62 | 12,385 | 45 | 6.50 | 3.01 |
| SR-90 | 0 | 0.48 | 8,875 | 1 | 0.63 | 4.02 |
| SR-90 | 0.49 | 1.61 | 4,725 | 1 | 0.63 | 6.43 |
| US-91 | 0 | 1.35 | 18,000 | 7 | 0.85 | 3.80 |
| US-91 | 1.36 | 1.96 | 20,315 | 5 | 1.45 | 3.80 |
| US-91 | 1.97 | 3.82 | 14,145 | 8 | 0.87 | 5.16 |
| US-91 | 3.83 | 5 | 17,085 | 10 | 1.27 | 3.80 |

* Statewide average accident rates for functional class and volume group.

Red indicates higher than expected rates of accidents

Bicycle and Pedestrian

The Federal Highway Administration recognizes the increasingly important role of walking and bicycling in creating a balanced, intermodal transportation system, and encourages state and local governments to incorporate all necessary provisions to accommodate pedestrian and bicycle traffic.

The City needs to encourage development consider the use of alternative modes of transportation in all planning decisions. A major concept promoted in the Commercial and Downtown Development Sections of this plan is a pedestrian friendly environment for these commercial areas of the community. This Section of the Plan also promotes this concept but more as part of a complete transportation system.

Biking/Trails

Brigham City acknowledges that within the community bicycles are used for recreation as well as commuting. This acknowledgement is documented in the General Plan as the need to provide “a well-defined, fine-grained street or trail network that allows bicycles to operate as an effective alternative to automobiles”.

The City currently does not have designated bike lanes on local roads. However, reference is made to the fact that certain streets may lend themselves to being identified as a designated bike route. In order to move this designation plan forward, the City has documented the need to prepare a detailed bicycle plan.

There are four popular trails identified in the Brigham City area, ranging in difficulty from beginner to advanced. These trails are known as:

- Inspiration Point – A 32 mile roundtrip trail located in the Wasatch Mountains southeast of Brigham City. Technical difficulty rating: Advanced
- Golden Spike, West Grade Tour – A 14 mile loop located at the Golden Spike National Historic Site. Technical difficulty



Brigham City should develop a “complete the street” philosophy that allows for the advancement of a transportation system for both motorized and non-motorized travel.

rating: Moderate

- Golden Spike, East Grade Tour – A 3.5 mile loop located at the Golden Spike National Historic Site. Technical difficulty rating: Beginner
- Little Pyrenees – This 24 mile trail travels through the rolling hills of the south Cache Valley, past the Wellsville Mountains and along the marshes surrounding the Little Bear River. Technical difficulty rating: Beginner

Additionally, the Governor's Legacy Trails Initiative as described in the State's Long Range Plan, identifies a network of trails that when completed, would ensure access to trails/paths within 15 minutes of home and work for all Utahans. One of these Legacy Trails is the Cold Water Canyon; a four-mile, unpaved trail located in the Brigham City area.

Pedestrian

Brigham City's street design consists of a strong grid network and a development pattern of short blocks and sidewalk that facilitates pedestrian traffic. This street pattern has made walking an attractive option for those in the community. However, some of the more recent developments constructed in the City have tended toward longer uninterrupted streets, less interconnectedness in the street network, and fewer sidewalks. This is particularly noticeable in the northeast quadrant of the City where sidewalks have not been installed and pedestrian safety is a concern.

The City recommends placement of a park strip to separate sidewalks from traffic lanes. This strategy provides an increased feeling of security for pedestrians and provides aesthetic appeal, while also servicing the need for snow storage.



Public Transportation

The Utah Transit Authority (UTA), currently, operates two bus routes primarily for commuters, which link Brigham City with Ogden. Route #630 runs down Main Street in Brigham stopping at the city offices, library, and hospital before heading south to Ogden where it terminates at the downtown Ogden transit center. Route #685 is operated from Brigham City to Harrison Avenue on Ogden's east side primarily for the benefit of Flying J Oil employees. Flying J's corporate headquarters relocated from Brigham City to Ogden several years ago and many of their employees still live in Brigham City. UTA will be implementing in August of 2006 a new local Flex Transit Route (638) within Brigham City area. This new bus route will provide a fixed route within Brigham City with an on demand pickup and delivery service upon request. The on demand service will include all of Brigham City, Perry City and Willard City

A Commuter Rail Task Force is investigating future transit needs and operations within the community, and how the city will connect with the proposed commuter rail system to be built north from Salt Lake City. Phase One of commuter rail should be in operation between Salt Lake City, Ogden, and Pleasant View by early 2008. While the extension of service north to Brigham City is not included in the first phase of commuter rail construction, this could change should additional tax revenue be obtained from the community in support of this project. Brigham City, in 2006, received \$225,000 in Federal funding to planning for a commuter rail station at the historical Union Pacific Station and study the cost and need for commuter rail from Pleasant View to Brigham City.

Intercity rail passenger service ended to Brigham City in April of 1981, though Amtrak's "Pioneer" continued to stop in Ogden on its route from Salt Lake City to Seattle until it was discontinued in May of 1997. Today the nearest Amtrak stop to Brigham City is in Salt Lake City where the Chicago to San Francisco "California Zephyr" stops nightly in both directions.

Freight

Brigham City is served by several important highway freight routes,



Proposed Commuter Rail Line Pleasant View to Brigham City

and as such is a key junction point for the trucking industry. Interstate Highways 15 and 84 are combined as they pass around the west side of Brigham City on a north/south alignment. I-15 is the primary north/south highway freight route through the Mountain West as well as serving as the main Canamex Corridor route for traffic to and from Mexico and Canada generated as a result of the North American Free Trade Agreement (NAFTA) Treaty. I-84 is the main highway link between the Pacific Northwest and the Midwestern and Eastern United States handling east/west truck traffic. U.S. Highways 89 and 91 are combined as they enter Brigham City from the Cache Valley and points north, with the roads splitting at the south end of town. U.S. 89 travels south along the Wasatch Mountains, while U.S. 91 continues west to combine with I-15/84 as far south as Ogden.

In addition to considerable amounts of long-distance truck traffic on these main highway freight routes, industries in the Brigham City area generate substantial inbound and outbound truck traffic.

Although not located in Brigham City proper, the large Wal-Mart Distribution Center in nearby Corinne, Utah, averages 150 inbound trucks and 125 outbound trucks each day. A lack of truck parking in the area has created a congestion and safety issue as inbound trucks arrive in the Brigham City/Corinne area in the late night/early morning hours and must wait for the Wal-Mart facility to open each morning.

Autoliv Corporation, located on the west side of downtown Brigham City on 1200 West generates an average of 25 inbound and 19 outbound trucks each day. Nucor Steel's subsidiaries Nucor Cold Finish and Vulcraft, both located on State Route 13 adjacent to I-15/84 generate an average of 18 outbound trucks each day with most inbound shipments being handled by rail.

On Brigham City's east side, up against the Wellsville Mountains, the Staker/Parson Gravel Pit averages upwards of 200 trucks per day during the busy summer construction season, with that number dropping to about 50 trucks each day during mid-winter. The other Staker/Parson's gravel pit, known as the "old Fife" pit sees an average of 50 trucks per day in summer with as little as one to five



Intersection of SR-91 & SR-13

in winter. Legrand Johnson Construction will be developing a new sand and gravel operation on the east side of US 89/91. That will add additional truck traffic to Brigham City street system.

Other truck freight producing industries in Brigham City include Southern Post on 600 North, ITEC, Storm Products on 800 West, and the Big J Grain Mill on Forest Street. Each of these industries is a vital part of the economy of Brigham City.

Among the challenges facing the trucking industry in the Brigham City area is the lack of access to U.S. 89/91 southbound from S.R. 90 eastbound at the mouth of Sardine Canyon on the east side of town. Also, legal issues associated with truck traffic using U.S. 89 through nearby Willard are having a major impact on the sand & gravel industry in Brigham City.

On May 10, 1869, the famous Golden Spike was driven at Promontory, Utah, less than 30 miles northwest of Brigham City marking the completion of America's first transcontinental railroad. Since that time, railroad freight service has been an important factor in the local economy. Although the transcontinental mainline was relocated to the historic Lucin Cutoff causeway across the Great Salt Lake west of Ogden in 1904, Brigham City has continued to be served by the Union Pacific Railroad.

Brigham City is the junction point between UP's secondary mainline from Ogden north to Pocatello, Idaho, and the Malad Branch running northwest from Brigham to Malad, Idaho via Corinne, Tremonton, and Plymouth, Utah. Several switching tracks are maintained by UP along the north/south mainline between the Malad Branch junction and the Forest Street crossing on the west side of downtown. Inasmuch as Forest Street is now one of three access points to and from I-15/84, railroad switching movements at the small Brigham City freight yard are having a greater impact on highway traffic.

Train operations in Brigham City consist of the "Malad Local," which operates daily except Saturdays between Brigham City and the main Nucor Steel mill at Plymouth, Utah. The Malad Local operates on an as needed basis to serve shippers along the line between

Plymouth and Malad, Idaho. However, with the recent addition of new rail shippers in Malad, this train will soon be running all the way to the end of the line three days per week, resulting in additional cars to be switched at the downtown Brigham City freight yard.

Freight cars traveling to and from either Brigham City's own industries, or those served by the Malad Local, arrive and depart from Brigham City's downtown freight yard via the "Brigham-Little Mountain Local." This train originates in Brigham City every day except Saturdays and taking outbound cars south to UP's Ogden/Riverdale Yard, returning with inbound cars for local delivery or transfer to the Malad Local. There are two to three mainline freight trains that pass through Brigham City every day in each direction. Normally these trains do not stop to switch cars in Brigham City as the transfer of cars traveling to and from Brigham City is handled at the Ogden/Riverdale Yard via the Brigham-Little Mountain Local.

The last train to work in Brigham City is called the "Brigham Switcher," which does local switching in the small yard near downtown putting together the outbound trains to Malad and Ogden. The Brigham Switcher goes on duty at 7:00 AM every day except Sunday, with the Brigham-Little Mountain Local going on duty at 8:00 AM. It is these two trains that create the bulk of the traffic delays at the Forest Street crossing. The Malad Local goes on duty at 2:00 PM in the afternoon.

The Union Pacific is well aware of the traffic impact issues at Forest Street, with current Manager of Train Operations (MTO) in Ogden, as well as the local train crews, striving to minimize blockage of that important crossing. Brigham City and the Union Pacific should work together to consider what options are viable for addressing this issue.

The largest rail shipper in the Brigham City area is Nucor Steel, with Nucor Cold Finish receiving about 50,000 tons of finished steel each year by rail, while Vulcraft next door receives more than 100,000 tons of steel annually. Almost all of these rail shipments come from the main Nucor Steel Mill in Plymouth, Utah via the Malad Branch, on which both of these subsidiary companies are



Union Pacific Rail Road Crossing at Forest Street

located near the Brigham City airport. As such, the cars traveling to and from Plymouth and the Vulcraft/Nucor Cold Finish plants are not switched at the aforementioned downtown freight yard. UP averages two to three mainline freight trains in each direction daily through Brigham City, which provide a link for local industries to the rest of the nation via the main freight switching yards in Salt Lake City, Ogden, Pocatello, and at Hinkle, Oregon, near Hermiston in the northeast part of the state.

At present, air cargo has a minor presence at the Brigham City Airport, consisting primarily of small, executive-type business jets flying in automobile airbag components from the eastern United States for Autoliv Corporation. The planned extension and strengthening of the runway at the Brigham City Airport would allow larger cargo jets to begin serving local industries, which is discussed further in the following section.

Aviation Facilities & Operations

At an elevation of 4226 feet above sea level, the Brigham City Airport is located three miles northwest of downtown Brigham City on State Route 13 next to the interchange with I-15/84. The airport is equipped with a single north/south runway #16/34, with a length of 8900 feet and a width of 150 feet. Paved with asphalt, runway 16/34 is equipped with pilot-activated runway lights while the airports airway beacon light is illuminated from dawn to dusk. While there is no control tower at Brigham City Airport, UNICOM and AWOS are available for pilots, as is a Non-directional electronic navigation beacon.

As the only airport in Box Elder County and one which serves a large area of northern Utah and southern Idaho, Brigham City has four Fixed-Base Operators (FBO), Airmotive Service, Mountain Air, The Flight Shop, and D & D Aircraft to handle aircraft fueling and maintenance needs. Both 100 octane aviation gasoline and Jet A fuel are available for general aviation and corporate business jet operations.

There is no commercial airline serving Brigham City with Salt Lake City International providing the nearest airline service. Air Cargo



Brigham City Municipal Airport

service into Brigham City is currently provided by charter carriers flying in automobile airbag components from the eastern United States to the Autoliv plant near downtown. Autoliv hopes that the proposed lengthening of runway 16/34 will allow larger DC-9 cargo jets to take over this operation, which is currently equipped with smaller, less efficient Lear and Falcon business-type aircraft.

The Brigham City Airport has just completed the lengthening of runway 16/34 an additional 1400 feet at the north end to a total length of 8900 ft. This combined with widening the safety area paralleling the runway from 150 feet to 300 feet, along with increasing the runway's pavement thickness will allow larger corporate and cargo jet aircraft to operate to their full design capacity year-round into Brigham City. Additionally, the city is investigating the installation of a full Instrument Landing System (ILS) to replace the current GPS non-precision approach system to better accommodate those larger and faster jet aircraft. A paved parallel taxiway and additional parking ramp space are also being considered for the Brigham City Airport

Revenue

Maintenance of existing transportation facilities and construction of new facilities come primarily from revenue sources that include the Brigham City general fund, federal funds and State Class C funds.

Financing for local transportation projects consists of a combination of federal, state, and local revenues. However, this total is not entirely available for transportation improvement projects, since annual operating and maintenance costs must be deducted from the total revenue. In addition, the City is limited in their ability to subsidize the transportation budget from general fund revenues.

State Class B and C Program

The distribution of Class B and C Program monies is established by state legislation and is administered by the State Department of Transportation. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. Twenty-five percent of the funds derived from the taxes and fees are distributed to cities and counties for

Apportionment Method of Class B and C Funds

| based on | Of |
|----------|--|
| 50% | Roadway Mileage *Based on Surface Type Classification (Weighted Measure) Pave Road (X 5) Graveled Road (X 2) Other Road (X 1) |
| 50% | Total Population |

construction and maintenance programs.

Class B and C funds are allocated to each city and county by the following formula: 50% based on the population ratio of the local jurisdiction with the population of the State, 50% based on the ratio that the Class B roads weighted mileage within each county and the class C roads weighted mileage within each municipality bear to the total class B and Class C roads weighted mileage within the state. Weighted means the sum of the following: (i) paved roads multiplied by five; (ii) graveled road miles multiplied by two; and (iii) all other road types multiplied by one. (Utah Code 72-2-108) The table on ther pervious page identifies the ratio used to determine the amount of B and C funds allocated.

Class B and C funds can be used for maintenance and construction of highways, however thirty percent of the funds must be used for construction or maintenance projects that exceed \$40,000. Class B and C funds can also be used for matching federal funds or to pay the principal, interest, premiums, and reserves for issued bonds.

Brigham City received \$669,176.92 in 2003 for its Class C fund allocation.

Federal Funds

There are federal monies that are available to cities and counties through federal-aid program. The funds are administered by the Utah Department of Transportation. In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP).

The Surface Transportation Program (STP) provides funding for any road that is functionally classified as a collector street or higher. STP funds can be used for a range of projects including rehabilitation and new construction. The Joint Highway Committee programs a portion of the STP funds for projects around the State for urban areas. A portion of the STP funds can be used in any area of the State, at the discretion of the State Transportation Commission.

Transportation Enhancement funds are allocated based on a competitive application process. The Transportation Enhancement Advisory Committee reviews the applications and then a portion of those are recommended to the State Transportation Commission for funding. Transportation enhancements include 12 categories ranging from historic preservation, bicycle and pedestrian facilities to water runoff mitigation. Other funds that are available are State Trails Funds, administered by the Division of Wildlife Resources.

The amount of money available for projects specifically in the study area varies each year depending on the planned projects in UDOT's Region One. As a result, federal aid program monies are not listed as part of the study area's transportation revenue.

Local Funds

Brigham City, like most cities, has utilized general fund revenues in its transportation program. Other options available to improve the City's transportation facilities could involve some type of bonding arrangement, either through the creation of a redevelopment district or a special improvement district. These districts are organized for the purpose of funding a single, specific project that benefits and identifiable group of properties. Another source is through general obligation bonding arrangements for projects felt to be beneficial to the entire entity issuing the bonds.

Private Sources

Private interests often provide alternative funding for transportation improvements. Developers construct the local streets within the subdivisions and often dedicate right-of-way and participate in the construction of collector or arterial streets adjacent to their developments. Developers can be considered as an alternative source of funds for projects because of the impacts of the development, such as the need for traffic signals or street widening. Developers should be expected to mitigate certain impacts resulting from their developments. The need for improvements, such as traffic signals or street

FRONT CIRCULATION PLAN MAP

7.2 TRANSPORTATION GOALS

7.2.1 GOAL: Support Many Modes Of Travel, Encourage Active Travel (Walking And Bicycling)

7.2.1.1 POLICY: Develop new street standards that consider both functional classification and the street type (adjacent land use) Augmenting Brigham City's functional classification system of arterials, collectors, and local streets, the General Plan designates five street typologies:

Street Typologies

Residential Street (R)
Main Street (M)
Mixed-Use Street (MU)
Commercial Street (C)
Industrial Street (I)

| Street Type | Local | Collector | Arterial |
|-------------|-------|-----------|----------|
| Residential | L-R | C-R | A-R |
| Main Street | | C-M | A-M |
| Mixed-Use | L-MU | C-MU | A-MU |
| Commercial | | C-C | A-C |
| Industrial | | C-I | A-I |

New Street Standards: Interrelationships Between Brigham City Street Functional Classifications and Street Typologies

IMPLEMENTATION

Review existing street standards and determine their role in filling one of the nine outlined new street standards

- A. Create street standards as necessary to develop a the remainder of the nine street standards

The functional classification of a street broadly defines its design and operational characteristics as they relate primarily to the movement of motor vehicles. By contrast, the street typologies further define streets by relating them to the adjacent land use and their function for pedestrians, bicyclists, and transit. Street design often ignores other modes of travel when it is based solely on the traditional functional classification. The design of a street, its intersections, sidewalks, and transit stops should reflect the adjacent land uses since the type and intensity of the adjacent land use directly influences the level of use by other modes.

The street typologies attempt to strike a balance between functional classification, adjacent land use, and the competing travel needs. Each street typology prioritizes various design elements by looking at factors related to both the adjacent land use and the functional classification. Where sufficient public right-of-way exists, all priority design elements may be accommodated. Within constrained public right-of-way, however, trade-offs between priority design elements are required to balance the functions of the various travel modes.

Landowners, developers, and builders have a tremendous interest in ensuring there is enough parking to make their development profitable or attractive to potential buyers. They also have a tremendous interest in reducing unnecessary expense as represented by substantially too much parking (defined as parking that is used only a few days each year).

Blanket parking standards applied across the city prevent more carefully derived calculations of estimated parking demand.

B. In developing new street standards, consider the priority elements for each street type outlined below

1. Residential Street Type Priority Elements

Initial Priority Elements

- Sidewalks
- Tree lawns
- On-street parking
- Landscaped medians
- Bike lanes on designated bicycle routes

Secondary Priority Elements

- Number and width of travel lanes (especially collector and local streets)

Examples of Traffic Management Features

- Medians
- On-street parking
- Street trees
- Narrower travel lanes
- Traffic circles and roundabouts
- Reduced pedestrian crossing distances at intersections, using curb extensions, traffic islands, and other measures
- Diverters

2. Main Street Type Priority Elements

Initial Priority Elements

- Wide sidewalks with transit access and pedestrian plazas
- Bicycle facilities
- Curb extensions
- Tree lawns
- On-street parking

Secondary Priority Elements

- Medians
- Width and number of travel lanes (for collector and local streets)

Examples of Traffic Management Features

- Narrower travel lanes
- Alternative paving material

- Tree planters in parking lane
- On-street parking
- Reduced pedestrian crossing distances at intersections, using curb extensions, traffic islands, and other measures
- Raised intersections
- High-visibility crosswalks

3. Mixed-Use Street Type Priority Elements

Initial Priority Elements

- Wide sidewalks and transit access (if applicable)
- Bicycle lanes on designated bike routes
- Other bicycle facilities
- Tree lawns
- On-street parking

Secondary Priority Elements

- Number and width of travel lanes (on collector and local streets)
- Medians

Examples of Traffic Management Features

- Landscaped Medians
- On-street parking
- Street trees
- Narrower travel lanes
- Traffic circles and roundabouts
- Reduced pedestrian-crossing distances at intersections, using curb extensions, traffic islands, and other measures

4. Commercial Street Type Priority Elements

Initial Priority Elements

- Number and width of travel lanes
- Medians
- Transit accommodations if applicable

Secondary Priority Elements

- Pedestrian facilities
- Bicycle facilities
- Tree lawns
- Two-way center left-turn lanes

| | |
|---|--|
| <ul style="list-style-type: none"> • On-street parking <p>Examples of Traffic Management Features</p> <ul style="list-style-type: none"> • Medians • Consolidated driveways • Synchronization of traffic signals • On-street parking • Narrower travel lanes • Reduced pedestrian crossing distances at intersections, using curb extensions, traffic islands, and other measures <p>5. Industrial Street Type Priority Elements</p> <p>Initial Priority Elements</p> <ul style="list-style-type: none"> • Wider travel lanes • Attached sidewalks • Wider turning radius at intersections <p>Secondary Priority Elements</p> <ul style="list-style-type: none"> • Medians • Bicycle lanes • On-street parking • Number of lanes • Tree lawns <p>Examples of Traffic Management Features</p> <ul style="list-style-type: none"> • Parking restrictions • Wider turn radius at intersections and access points • Acceleration and deceleration lanes <p>7.2.1.2 POLICY: Develop a Bicycle Plan identifying bike lanes on Appropriate Collectors and Arterials</p> <p>7.2.1.3 POLICY: Require sidewalks on all non-rural streets</p> <p>IMPLEMENTATION</p> <p>Develop and implement a Pedestrian and Sidewalk aster Plan for Brigham City</p> | |
|---|--|

7.2.1.4 POLICY: Require new streets to be interconnected to improve pedestrian friendliness

IMPLEMENTATION

- A. Establish Maximum block-sizes for various Land Use Categories ensure interconnected streets
- B. Definition: A block is the land surrounded by streets and other right-of-way other than an alley, or land which is designated as a block on any recorded subdivision map.
- C. Block size standards should be an inverse function of density: Smaller blocks for higher density development.
- D. Establish a reasonable maximum length of cul-de-sacs.
- E. If block size standards are unrealistic for steep slope areas, require walkway connectivity

7.2.2 GOAL: Meet Brigham City's Parking Needs Balanced With A Goal Of Reducing Unnecessary Land Consumption And Development Costs

7.2.2.1 POLICY: Vary parking requirements based on commercial district characteristics

In commercial areas where there is a reasonable likelihood of consumers arriving by pedestrian and bicycle, or where a desired goal is to work toward a walkable shopping environment where many destinations are within reach of a typical walk, Brigham City should reduce required parking rates.

IMPLEMENTATION

- A. Develop parking rates in conjunction with the site
- B. orientation levels outlined in section 3.
 - 1. Level 1 = standard parking rates
 - 2. Level 2 = 80% to 90% of standard parking rates
 - 3. Level 3 = 70% to 80% of standard parking rates
 - 4. Level 4 = 40% to 70% of standard parking rates
- B. For Levels 2 through 4, adjacent on-street parking or

TODAY'S PARKING REQUIREMENTS

Typical zoning and industry standards act to require enough parking that:

- *Parking is 50 percent vacant for 50 percent of the year*
- *Parking lots that are 85 percent full are "functionally" full*
- *Parking lots are "functionally" full only 20 hours a year (0.3 percent of the year)*

nearby public shared parking facilities may count toward meeting required minimum supplies.

7.2.3 GOAL: Work the Utah Department of Transportation (UDOT) to better coordinate State Highway Improvement within Brigham City

7.2.3.1 POLICY: Work with the UDOT to identify transportation needs within Brigham City

IMPLEMENTATION

- A. Develop a corridor preservation agreement for SR-13 from 1100 South to 900 North I-15 interchange.
- B. Make improvements to the Railroad Crossing at Forest Street and Railroad right-of-way.
- C. Coordinate the redevelopment of the Interchange at 200 South (SR-90) from a on-off ramp to a full urban interchange. This would facilitate the removal of gravel truck traffic in the Brigham City's downtown

7.2.4 GOAL: Improve Transit options within Brigham City

7.2.4.1 POLICY: Work with the Utah Transit Authority to provide improved local transit services within Brigham City.

7.2.4.2 POLICY: Work with the Utah Transit Authority to provide Commuter Rail Service to Brigham City.